

Division of Water
Anchorage

AUG 21 2013

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DJ AM
2339.48.003

August 19, 2013

Alaska Dept. of Environmental Conservation
ATTN: Division of Water
555 Cordova Street
Anchorage, Alaska 99501

FedEx: 7964 9547 4878

SUBJECT: DISCHARGE MONITORING REPORTS, NPDES PERMIT NUMBERS
AKG-31-5003 EAST FORELANDS FACILITY
AKG-31-5012 PLATFORM A
AKG-31-5013 PLATFORM C

Enclosed are the subject National Pollution Discharge Elimination System (NPDES) Discharge Monitoring Reports for the month of July, 2013.

XTO Energy has received correspondence from the State of Alaska (Letter dated 12/26/2012) informing us that the EPA has approved the state's application to administer the NPDES program. As a result of this phase change to APDES, XTO will no longer submit permit applications, DMR's or other reports to the EPA.

If there are any questions, please don't hesitate to contact me at (907) 776-2510.

Yours Truly,

A handwritten signature in black ink, appearing to read "Ryan Tunseth".

Ryan Tunseth
EHS Manager

Enclosures: July 2013 DMR
1st Period 2013 WET Test Reports

cc:

Nina Hutton
Scott Griffith

Division of Water
Anchorage

AUG 21 2013

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XTO ENERGY INC

52260 Wik Road

Kenai, Alaska 99611

NPDES - Discharge Monitoring Report

<u>Facility</u>	<u>Permit ID</u>	<u>Month / Yr</u>
East Forelands	AKG-31-5003	Jul-13

Attachments

- ◆ 1st Period 2013 WET Test Reports

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

DMR Mailing Zip Code: 99611
MAJOR
(SUBR 02)
PRODUCED WATER AND SAND
External Outfall

NAME: XTO ENERGY, INC
ADDRESS: 52260 WIK RD
KENAI, AK 99611
FACILITY: EAST FORELAND

LOCATION: 52260 WIK ROAD, KENAI AK 99611

ATTN: Ryan Tunseth, EHS Manager


(2-16)	(17-19)
AKG 31 5003	015
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

FROM	YEAR	MONTH	DAY	TO	YEAR	MONTH	DAY
	2013	7	1		2013	7	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

No Discharge ☐

PARAMETER (32-37)		QUANTITY OR LOADING (46-53)			QUALITY OR CONCENTRATION (38-45) (46-53) (54-61)				NO EX. (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		Average (53)	Maximum (54-61)	Units (46)	Minimum (38-45)	Average (46-53)	Maximum (54-61)	Units			
015 - Produced Water FLOW	Sample Measurement	0.12703591	0.163687	MGD	***	***	***	***	0	Weekly	Estimate
	Permit Requirement	***	***		***	***	***	***	***	Weekly	Estimate
015 - Produced Water PRODUCED SAND	Sample Measurement	***	***	***	No discharge	No discharge	No discharge	***	0	***	***
	Permit Requirement	***	***		No discharge	No discharge	No discharge	***	***	***	***
015 - Produced Water OIL & GREASE 03582 T	Sample Measurement	***	***	***	***	20.20	25	mg/l	0	Weekly	Grab
	Permit Requirement	***	***		***	29	42		***	Weekly	Grab
015 - Produced Water pH 00400-V	Sample Measurement	***	***	***	7.4	***	7.5	SU	0	Weekly	Grab
	Permit Requirement	***	***		6	***	9		***	Weekly	Grab
015 - Produced Water TAH 39942 P 0	Sample Measurement	***	***	***	***	7.15	7.15	mg/l	0	Monthly	Grab
	Permit Requirement	***	***		***	24	32		***	Monthly	Grab
015 - Produced Water TAqH 50259 P 0	Sample Measurement	***	***	***	***	7.28	7.28	mg/l	0	Monthly	Grab
	Permit Requirement	***	***		***	Report	Report		***	Monthly	Grab
015 - Produced Water TOTAL AMMONIA 00610 1 0	Sample Measurement	***	***	***	6.00	6.00	6.00	mg/l	0	Quarterly	Grab
	Permit Requirement	***	***		Report	***	Report		***	Quarterly	Grab

NAME TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 Signature	Telephone	Date (YR/MO/DAY)
Ryan Tunseth EHS Manager			907 776-8473	8/19/2013

COMMENTS & EXPLANATION OF ANY VIOLATIONS: WET Testing sampling frequency is reduced to once/6 months [Section II.G.6.a - Permit # AKG-31-5000] 1st period 2013 WET tests were taken in June of 2013, reports are submitted with this (July 2013) DMR. Additionally, the sampling frequency for Copper, Manganese, Silver, Total Mercury, and Zinc is reduced in frequency from monthly to quarterly [Section II.G.6.a - Permit # AKG-31-5000] 3rd Quarter 2013 sample results were taken in July 2013 and are reported on this (July 2013) DMR.

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

NAME: XTO ENERGY, INC

ADDRESS: 52260 WIK RD

KENAI, AK 99611

FACILITY: EAST FORELAND

LOCATION: 52260 WIK ROAD, KENAI AK 99611

ATTN: Ryan Tunseth, EHS Manager

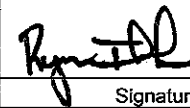
(2-16)	(17-19)
AKG 31 5003	015
PERMIT NUMBER	DISCHARGE NUMBER

DMR Mailing Zip Code: 99611
MAJOR
(SUBR 02)
PRODUCED WATER AND SAND
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No Discharge ☐

PARAMETER (32-37)		QUANTITY OR LOADING (53) (54-61)			QUALITY OR CONCENTRATION (38-45) (46-53) (54-61)				NO EX. (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		Average	Maximum	Units	Minimum	Average	Maximum	Units			
015 - Produced Water COPPER 01119 P 0	Sample Measurement	***	***	***	7.02	7.02	7.02	ug/l	0	Quarterly	Grab
	Permit Requirement	***	***		---	60	90		---	Quarterly	Grab
015 - Produced Water MERCURY 71900 P 0	Sample Measurement	***	***	***	0.00	0.00	0.00	ug/l	0	Quarterly	Grab
	Permit Requirement	***	***		---	0.5	0.8		---	Quarterly	Grab
015 - Produced Water MANGANESE 11123 P 0	Sample Measurement	***	***	***	2.61	2.61	2.61	mg/l	0	Quarterly	Grab
	Permit Requirement	***	***		---	7.9	15.8		---	Quarterly	Grab
015 - Produced Water SILVER 01079 P 0	Sample Measurement	***	***	***	1.39	1.39	1.39	ug/l	0	Quarterly	Grab
	Permit Requirement	***	***		---	46	149		---	Quarterly	Grab
015 - Produced Water ZINC 01094 P 0	Sample Measurement	***	***	***	0.03	0.03	0.03	mg/l	0	Quarterly	Grab
	Permit Requirement	***	***		---	3.1	6.1		---	Quarterly	Grab
015 - Produced Water WET - <i>Mytilus galloprovincialis</i> (invertebrate) TT000 P 0	Sample Measurement	***	***	***	<625	<625	<625	TUc	0	Semi Annual	Grab
	Permit Requirement	***	***		---	1209	2425		---	Semi Annual	Grab
NAME TITLE PRINCIPAL EXECUTIVE OFFICER					<div align="center">  Signature </div>			Telephone		Date (YR/MO/DAY)	
Ryan Tunseth EHS Manager								907 776-8473		8/19/2013	
COMMENTS & EXPLANATION OF ANY VIOLATIONS: WET Testing sampling frequency is reduced to once/6 months [Section II.G.6.a - Permit # AKG-31-5000] 1st period 2013 WET tests were taken in June of 2013, reports are submitted with this (July 2013) DMR. Additionally, the sampling frequency for Copper, Manganese, Silver, Total Mercury, and Zinc is reduced in frequency from monthly to quarterly [Section II.G.6.a - Permit # AKG-31-5000] 3rd Quarter 2013 sample results were taken in July 2013 and are reported on this (July 2013) DMR.											

TOXICITY TEST REPORT

TEST IDENTIFICATION

Test No.: 663-153

Title: Mussel (*Mytilus galloprovincialis*) larval test using static 48-hr exposure to XTO Energy – East Foreland produced water.

Protocol No.: NAS-XXX-CG/MG2, August 28, 1990, Revision 3 (9-8-01). This protocol complies with the U.S. EPA West Coast chronic toxicity manual (EPA/600/R-95/136) and ASTM bivalve toxicity method (E 724-89).

STUDY MANAGEMENT

Study Sponsor: XTO Energy, 52260 Wik Rd, Kenai, AK 99611

Sponsor's Study Monitor: Mr. Ryan Tunseth

Testing Laboratory: Northwestern Aquatic Sciences, P.O. Box 1437, Newport, OR 97365.

Test Location: Newport laboratory.

Laboratory's Study Personnel: G.A. Buhler, B.S., Proj. Man.; G.J. Irissarri, B.S., Study Dir.; L.K. Nemeth, B.A., M.B.A., QA Officer; Y. Nakahama, Sr. Tech.; S. Gage, B.S., Tech.

Study Schedule:

Test Beginning: 6-19-13, 1415 hrs.

Test Ending: 6-21-13, 1425 hrs.

Disposition of Study Records: All raw data, reports and other study records are stored at Northwestern Aquatic Sciences, 3814 Yaquina Bay Rd., Newport, OR 97365.

Statement of Quality Assurance: The test data were reviewed by the Quality Assurance Unit to assure that the study was performed in accordance with the protocol and standard operating procedures. This report is an accurate reflection of the raw data.

TEST MATERIAL

Description: XTO Energy East Foreland produced water. Details are as follows:

NAS Sample No.	4499G
Collection Date	6-18-13
Receipt Date	6-19-13
Temperature (°C)	1.6
pH	7.6
Dissolved oxygen (mg/L)	10.6
Salinity (‰)	14.0

Treatments: Sample was briefly temperature-equilibrated prior to use.

Storage: Used date of receipt.

DILUTION WATER

Source: Yaquina Bay, Oregon.

Date of Collection: 6-18-13

Water Quality: Salinity, 30.0 ‰; pH, 8.2

Pretreatment: Filtered to $\leq 0.45 \mu\text{m}$, aerated, and salinity adjusted with Milli-Q water.

BRINE USED FOR SALINITY CONTROL

None Used

TEST ORGANISMS

Species: Mussel (*Mytilus galloprovincialis*).

Age: 1.7 hours post-fertilization.

Source: Carlsbad Aquafarm, Carlsbad, CA.

Conditioning: Adult mussels were received on 6-12-13 and placed in trays with flowing seawater. Holding conditions for the week prior to testing were: temperature, $15.9 \pm 1.1^\circ\text{C}$; pH, 7.9 ± 0.2 ; salinity, 31.8 ± 0.3

‰; and dissolved oxygen, 7.9 ± 0.2 mg/L. Photoperiod was natural daylight.
Source of Gametes: 1 female and 3 males.

TEST PROCEDURES AND CONDITIONS

Test Chambers: 30 ml borosilicate glass vials containing 10 ml of test solutions.

Test Concentrations: 0.16, 0.08, 0.04, 0.02, 0.01, and 0% (Control).

Brine Control: None used

Replicates/Treatment: 4

Initial Concentration of Test Organisms: 23.9/ml.

Volume of Subsamples Taken for Counting: NA

Water Volume Changes per 24 hr: None (non-renewal static test).

Aeration: None

Feeding: None

Effects Criteria: The effect criteria used were: 1) ability of embryos to survive and produce completely developed shells; and 2) survival. Data collected were: 1) the initial embryo density; 2) the number of abnormal larvae observed; and 3) the number of normal (live with completely developed shells) larvae observed.

Water Quality and Other Test Conditions: Temperature, $15.5 \pm 0.2^\circ\text{C}$; pH, 8.0 ± 0.1 ; salinity, 30.0 ± 0.0 ‰; and dissolved oxygen, 8.1 ± 0.0 mg/L. Photoperiod 16:8 hr, L:D.

DATA ANALYSIS METHODS

The proportion of surviving larvae, and the proportion of normal surviving larvae were calculated for each treatment replicate. The calculation used for the proportion of normal surviving larvae, Combined Proportion Normal, was the combined endpoint specified by EPA/600/R-95/136. The means were obtained for each treatment level and the latter were then corrected for control response using Abbott's formula. The LC50 (survival) and the EC50 (normality) were calculated, where data permitted, using either the Maximum-Likelihood Probit or the Trimmed Spearman-Kärber methods. An IC25 was determined by linear interpolation with bootstrapping. NOEC and LOEC values for survival and normality were computed using either Dunnett's test, T-test with Bonferroni's adjustment, Steel's Many-One Rank Test, or Wilcoxon Rank Sum Test with Bonferroni Adjustment. The appropriate test was selected after evaluating the data for normality and homogeneity of variance. An arcsine-square root (angular) transformation was performed on the data prior to statistical analysis. The statistical software employed for these calculations was CETIS, v1.8.7.4 Tidepool Scientific Software. Toxic units (TU_c) were computed as 100/NOEC, 100/EC50, or 100/IC25.

PROTOCOL DEVIATIONS

None

REFERENCE TOXICANT TEST

The routine reference toxicant test is a standard multi-concentration toxicity test using copper sulfate to evaluate the performance of the test organisms used in the effluent toxicity test. The performance is evaluated by comparing the results of this test with historical results obtained at the laboratory. A summary of the reference toxicant test result is given below. The reference toxicant test raw data are found in Appendix III.

Test No.: 999-3186

Reference Toxicant and Source: Copper as $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$, Argent Lot No. 0195. Concentrated stock prepared 6-28-12.

Test Date: 6-19-13

Dilution Water Used: Yaquina Bay, OR seawater. Salinity 30.0 ‰, pH 8.2.

Results: EC50, 10.5 µg/L; NOEC, 8 µg/L; IC25, 9.67 µg/L. The EC50 results are within the laboratory's control chart warning limits (7.87 – 12.9 µg/L).

TEST RESULTS

Detailed tabulations of the test results are given in Table 1. The biological effects, given as the NOEC, LOEC, EC50/LC50 for normality and survival, and IC25 for normality are summarized below.

	Combined Proportion Normal	Survival
NOEC (%)	0.16 (TU _c =625)	0.16 (TU _c =625)
LOEC (%)	>0.16 (TU _c <625)	>0.16 (TU _c <625)
EC50/LC50 (%)	>0.16 (TU _c <625)	>0.16 (TU _c <625)
(95% C.I.)	---	---
Method of Calculation	By Data Inspection	By Data Inspection
IC25 (%)	>0.16 (TU _c <625)	
(95% C.I.)	---	
Method of Calculation	Linear Interpolation	

DISCUSSION/CONCLUSIONS

The NOEC was 0.16% effluent for both development and for survival. The EC50 and IC25 for abnormal development were both >0.16%.

STUDY APPROVAL

Bay Buhler 7-17-13
Project Manager Date

Sheld Luman 7-17-13
Study Director Date

Linda K. Nemeth 7/9/13
Assistant Laboratory Director Date

Julie R. Fiore 7/17/13
Quality Assurance Unit Date

Table 1. Test response of mussel (*Mytilus galloprovincialis*) larvae exposed to XTO Energy – East Foreland produced water.

Test Material	Concentration (%)	Repl.	Norm.	Abn.	Total	Combined Proportion Normal*	Proportion Survived*	
						Mean	Mean	
0.16		1	241	6	247	0.976		1.000
		2	223	5	228	0.933		0.954
		3	220	3	223	0.921		0.933
		4	232	3	235	0.971	0.950	0.983 0.968
0.08		1	204	3	207	0.854		0.866
		2	231	1	232	0.967		0.971
		3	217	9	226	0.908		0.946
		4	214	4	218	0.895	0.906	0.912 0.924
0.04		1	226	5	231	0.946		0.967
		2	246	3	249	0.988		1.000
		3	230	2	232	0.962		0.971
		4	193	1	194	0.808	0.926	0.812 0.937
0.02		1	226	3	229	0.946		0.958
		2	252	1	253	0.996		1.000
		3	245	3	248	0.988		1.000
		4	219	4	223	0.916	0.962	0.933 0.973
0.01		1	212	1	213	0.887		0.891
		2	216	3	219	0.904		0.916
		3	239	2	241	1.000		1.000
		4	228	2	230	0.954	0.936	0.962 0.943
Normal Control		1	217	3	220	0.908		0.921
		2	213	3	216	0.891		0.904
		3	239	2	241	1.000		1.000
		4	211	1	212	0.883	0.921	0.887 0.928

* Based on an average initial count of 239 embryos per 10 ml sample, except that for the case in the combined proportion normal endpoint where number normal > average initial count, number normal is divided by the total count (as per EPA/600/R-95/136).

† Result significantly different ($P \leq 0.05$) from the control.